

What is claimed is:

1. A solid electrolytic capacitor comprising a capacitor element including an anode body having an anode leading member, and a dielectric coating layer, a solid electrolyte layer and
5 a cathode leading layer which are formed successively over a surface of the anode body, the anode leading member having an anode terminal member connected thereto, the cathode leading layer having a cathode terminal member connected thereto, the capacitor element being covered with a packaging resin
10 portion,

the solid electrolytic capacitor being characterized in that the cathode terminal member is connected to the cathode leading layer with current control means provided therebetween,

the current control means comprising a current control layer
15 reversibly increasable in electrical resistance with overcurrent or excessive heat, and a pair of electrode members each in the form of a plate or foil and having the current control layer sandwiched therebetween,

the electrode members being joined to the cathode leading
20 layer and the cathode terminal member respectively.

2. A solid electrolytic capacitor according to claim 1 wherein the anode terminal member is disposed under the anode leading member projecting generally horizontally from the anode body,

25 the current control means being disposed under the anode body,

the cathode terminal member being disposed under the current control means.

3. A solid electrolytic capacitor according to claim 1

wherein the capacitor element is generally in the form of a rectangular parallelepiped, and the capacitor element has a surface joined to and covered with the current control means.

4. A solid electrolytic capacitor according to claim 1
5 wherein the current control layer is a layer prepared from an insulating polymer having electrically conductive particles admixed therewith.

5. A solid electrolytic capacitor comprising a capacitor
element including an anode body having an anode leading member,
10 and a dielectric coating layer, a solid electrolyte layer and a cathode leading layer which are formed successively over a surface of the anode body, the anode leading member having an anode terminal member connected thereto, the cathode leading layer having a cathode terminal member connected thereto, the
15 capacitor element being covered with a packaging resin portion,

the solid electrolytic capacitor being characterized in that the cathode terminal member is connected to the cathode leading layer with current control means provided therebetween,
20 the current control means comprising a current control layer reversibly increasable in electrical resistance with overcurrent or excessive heat, and an electrode member in the form of a plate or foil,

the current control layer being sandwiched between the
25 electrode member and the cathode terminal member,

the electrode member being joined to the cathode leading layer.

6. A solid electrolytic capacitor according to claim 5 wherein the anode terminal member is disposed under the anode

leading member projecting generally horizontally from the anode body,

the current control means being disposed under the anode body,

5 the cathode terminal member being disposed under the current control means.

7. A solid electrolytic capacitor according to claim 5 wherein the capacitor element is generally in the form of a rectangular parallelepiped, and the capacitor element has a
10 surface joined to and covered with the current control means.

8. A solid electrolytic capacitor according to claim 5 wherein the current control layer is a layer prepared from an insulating polymer having electrically conductive particles admixed therewith.

15 9. A solid electrolytic capacitor comprising a capacitor element including an anode body having an anode leading member, and a dielectric coating layer, a solid electrolyte layer and a cathode leading layer which are formed successively over a surface of the anode body, the anode leading member having an
20 anode terminal member connected thereto, the cathode leading layer having a cathode terminal member connected thereto, the capacitor element being covered with a packaging resin portion,

the solid electrolytic capacitor being characterized in that
25 the anode terminal member is connected to the anode leading member with current control means provided therebetween,

the current control means comprising a current control layer reversibly increasable in electrical resistance with overcurrent or excessive heat, and a pair of electrode members

each in the form of a plate or foil and having the current control layer sandwiched therebetween,

the electrode members being joined to the anode leading member and the anode terminal member respectively.

5 10. A solid electrolytic capacitor according to claim 9 wherein the electrode member joined to the anode leading member has an extension portion not in contact with the current control layer, and the extension portion is joined to the anode leading member.

10 11. A solid electrolytic capacitor according to claim 9 wherein the current control means is disposed under the anode leading member projecting generally horizontally from the anode body,

the anode terminal member being disposed under the current control means,

15 the cathode terminal member being disposed under the anode body.

 12. A solid electrolytic capacitor according to claim 9 wherein the current control layer is a layer prepared from an insulating polymer having electrically conductive particles admixed therewith.

 13. A solid electrolytic capacitor comprising a capacitor element including an anode body having an anode leading member, and a dielectric coating layer, a solid electrolyte layer and a cathode leading layer which are formed successively over a surface of the anode body, the anode leading member having an anode terminal member connected thereto, the cathode leading layer having a cathode terminal member connected thereto, the capacitor element being covered with

a packaging resin portion,

the solid electrolytic capacitor being characterized in that the anode terminal member is connected to the anode leading member with current control means provided therebetween,

5 the current control means comprising a current control layer reversibly increasable in electrical resistance with overcurrent or excessive heat, and an electrode member in the form of a plate or foil,

the current control layer being sandwiched between the
10 electrode member and the anode terminal member,

the electrode member being joined to the anode leading member.

14. A solid electrolytic capacitor according to claim
13 wherein the electrode member has an extension portion not
15 in contact with the current control layer, and the extension portion is joined to the anode leading member.

15. A solid electrolytic capacitor according to claim
13 wherein the current control means is disposed under the anode
leading member projecting generally horizontally from the
20 anode body,

the anode terminal member being disposed under the current control means,

the cathode terminal member being disposed under the anode body.

25 16. A solid electrolytic capacitor according to claim 13 wherein the current control layer is a layer prepared from an insulating polymer having electrically conductive particles admixed therewith.

17. A solid electrolytic capacitor comprising a current

control layer for controlling short-circuit current, the current control layer being prepared from an insulating polymer having electrically conductive particles admixed therewith and being sandwiched between a pair of electrode members made of at least one of nickel and copper.

18. A solid electrolytic capacitor according to claim 17 wherein at least one of the electrode members is a nickel plate, nickel foil, copper plate, copper foil, nickel-plated copper plate or nickel-plated copper foil.

19. A solid electrolytic capacitor according to claim 17 wherein the current control layer and the electrode members are provided in the form of an element.

20. A solid electrolytic capacitor according to claim 17 wherein the insulating polymer is a polyethylene resin.

21. A solid electrolytic capacitor according to claim 17 which comprises a capacitor element including an anode body having an anode leading member, and a dielectric coating layer, a solid electrolyte layer and a cathode leading layer which are formed successively on the anode body.

22. A solid electrolytic capacitor according to claim 21 which comprises a cathode terminal member connected to the cathode leading layer, one of the electrode members being joined to the cathode leading layer, the other electrode member being joined to the cathode terminal member.

23. A solid electrolytic capacitor according to claim 21 which comprises an anode terminal member connected to the anode leading member, one of the electrode members being joined to the anode leading member, the other electrode member being joined to the anode terminal member.

24. A solid electrolytic capacitor according to claim 21 which comprises a cathode terminal member connected to the cathode leading layer, one of the electrode members being joined to the cathode leading layer, the cathode terminal member having a portion serving as the other electrode member.

25. A solid electrolytic capacitor according to claim 21 which comprises an anode terminal member connected to the anode leading member, one of the electrode members being joined to the anode leading member, the anode terminal member having a portion serving as the other electrode member.

26. A current control element comprising a current control layer for controlling short-circuit current of a solid electrolytic capacitor,

the current control layer being prepared from an insulating polymer having electrically conductive particles admixed therewith and being sandwiched between a pair of electrode members made of at least one of nickel and copper.

27. A process for fabricating a solid electrolytic capacitor having low equivalent series resistance and comprising a current control layer for controlling short-circuit current, the process including the step of joining a current control element according to claim 26 to a capacitor element.